



STIC Search Report

EIC 3600

STIC Database Tracking Number: 117431

TO: Jim McClellan
Location: PK5 7X07
Art Unit: 3627
Tuesday, March 23, 2004

Case Serial Number: 09/982991

From: Caryn Wesner-Early
Location: EIC 3600
PK5-Suite 804
Phone: 306-5967

caryn.wesner@uspto.gov

Search Notes

If a modification or re-focus of this search is needed, please let me know.

Caryn S. Wesner-Early, MSLS
Technical Information Specialist
EIC 3600, US Patent & Trademark Office
Phone: (703) 306-5967
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caryn.wesner@uspto.gov



Dusha



117421

Access DB#

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Jim McClellan Examiner #: 75466 Date: 3/22/04
Art Unit: 3627 Phone Number: 305-0212 Serial Number: 09/982,991
Mail Box and Bldg/Room Location: PK5-7X07 Results Format Preferred: Paper

If more than one search is submitted, please prioritize searches in order of need.

Title of Invention: Method for managing physical distribution with returnable containers
Inventors (please provide full names): So Kawamura; Shigeki Urai, Isao Agekura, & Osamu Kimizuka

Earliest Pri. Filing Date: 10/25/00

Notes:

This invention is directed to managing inventory levels of shipping containers. Distributors that own the shipping containers send notices to the businesses that received the containers and request that the business return empty shipping containers. The distributors utilize an inventory management system to determine when to request the return of their shipping containers, wherein reducing the need to store empty containers.

I have attached a copy of the ABSTRACT, Summary of the Invention, Background of the Invention, and Claim 1.

Possible Keywords: inventory, container, cargo, shipping, delivery, return, recycle, JIT, just-in-time.

This case is classified in class 705/22.

g06f-0177

705/28

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <i>Alban - 10/17</i>	NA Sequence (#) _____	STN _____
Searcher Phone #: <i>306-5967</i>	AA Sequence (#) _____	Dialog _____
Searcher Location: <i>ETC 3400</i>	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <i>3/22/04</i>	Bibliographic _____	Dr. Link _____
Date Completed: _____	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____



STIC Search Results Feedback Form

EIC 3600

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Karen Lehman, EIC 3600 Team Leader
306-5783, PK5- Suite 804

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 3620 (optional)

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC3600 PK5 Suite 804



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?show files;ds
File 347:JAPIO Nov 1976-2003/Nov(Updated 040308)
(c) 2004 JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-2004/Mar W02
(c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040318,UT=20040311
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(c) 2004 The HW Wilson Co.
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(c) 2003 EBSCO Pub.
File 256:SoftBase:Reviews,Companies&Prods. 82-2004/Feb
(c)2004 Info.Sources Inc
File 474:New York Times Abs 1969-2004/Mar 21
(c) 2004 The New York Times
File 475:Wall Street Journal Abs 1973-2004/Mar 19
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(c) 2002 The Gale Group
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(c) 2004 Elsevier Eng. Info. Inc.
File 34:SciSearch(R) Cited Ref Sci 1990-2004/Mar W2
(c) 2004 Inst for Sci Info
File 94:JICST-EPlus 1985-2004/Mar W2
(c)2004 Japan Science and Tech Corp(JST)
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info
File 5:Biosis Previews(R) 1969-2004/Mar W2
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File 40:Enviroline(R) 1975-2004/Feb
File 248:PIRA 1975-2004/Mar W1
(c) 2004 Pira International
File 249:PIRA Mgt. & Mktg. Abs. 1976-2004Mar W2
(c) 2004 Pira International
File 50:CAB Abstracts 1972-2004/Feb
(c) 2004 CAB International
File 58:GeoArchive 1974-2004/Sep
(c) 2004 Geosystems
File 110:WasteInfo 1974-2002/Jul
(c) 2002 AEA Techn Env.
File 144:Pascal 1973-2004/Mar W2
(c) 2004 INIST/CNRS
File 266:FEDRIP 2004/Jan

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(c) 2004 Elsevier Science Ltd.
File 111:TGG Natl.Newspaper Index(SM) 1979-2004/Mar 22
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(c) 2004 Elsevier Eng. Info. Inc.
File 323:RAPRA Rubber & Plastics 1972-2004/Mar
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(c) 2004 Financial Times Ltd
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(c) 2004 Business Wire.
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(c) 2004 PR Newswire Association Inc
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(c) 2004 McGraw-Hill Co. Inc
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(c) 2004 The Gale Group
File 98:General Sci Abs/Full-Text 1984-2004/Feb
(c) 2004 The HW Wilson Co.
File 369:New Scientist 1994-2004/Mar W2
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File 370:Science 1996-1999/Jul W3
(c) 1999 AAAS
File 484:Periodical Abs Plustext 1986-2004/Mar W2
(c) 2004 ProQuest

Set	Items	Description
S1	2579	AU='KAWAMURA S':AU='KAWAMURA S-I'
S2	20	AU='KAWAMURA SO'
S3	1	AU='SO KAWAMURA'
S4	26	AU='URAI S'
S5	5	AU='URAI SHIGEKI':AU='URAI SHIGEKO'
S6	26	AU='URAI, S':AU='URAI, S.'
S7	0	AU='URAI, SHIGEKI'
S8	1	AU='AGEKURA I'
S9	0	AU='AGEKURA ISAO'
S10	0	AU='AGEKURA, ISAO'
S11	2	AU='KIMIZUKA O':AU='KIMIZUKA OSAMU'
S12	0	AU='KIMIZUKA, O'
S13	2654	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 - OR S11 OR S12
S14	328	S13 FROM 347,348,349,350,371
S15	309658	IC=G06F-017?
S16	8	S14 AND S15
S17	12801644	CONTAINER? ? OR RECEPTACLE? ? OR HOLDER? ? OR TANK? ? OR P-

ALLET OR CONTAINERI??? OR CRATE? ? OR TRAY OR TRAYS OR BARREL-
?? OR DRUM? ? OR BOX?? OR PACKAGE? ? OR PACKAGING OR MAILER? ?

S18 50 S14 AND S17

S19 10406864 RETURN? OR REUSABLE OR RE()USABLE OR REUSEABLE OR REUSING -
OR REUSES OR RECYCL? OR REVERT??? OR (SEND??? OR TAK???) ()BACK
OR LENT OR LOAN??

S20 4 S18 AND S19

S21 10 S16 OR S20

S22 10 IDPAT (sorted in duplicate/non-duplicate order)

S23 8 IDPAT (primary/non-duplicate records only)

S24 2326 S13 NOT S14


S25 11 S24 AND S17

S26 10 S25 NOT PY>2000

S27 10 S26 NOT PD=20001026:20040430

S28 8 RD (unique items)

S29 16 S23 OR S28

3/25/04  Reviewed

29/3,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

014654824 **Image available**
WPI Acc No: 2002-475528/200251
XRPX Acc No: N02-375353

Physical distribution management system for inventory control, calculates
product insufficiency and *returnable* *package* insufficiency and
transmits corresponding admonition to manufacturer and seller
respectively

Patent Assignee: NGK INSULATORS LTD (NIGA); ASAHI TEC KK (ASAI); MEIKO
KAIUN KK (MEIK-N)

Inventor: *AGEKURA I*; *KAWAMURA S*; *KIMIZUKA O*; *URAI S*

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002128234	A	20020509	JP 2000325534	A	20001025	200251 B
US 20020069141	A1	20020606	US 2001982991	A	20011022	200260
CN 1363905	A	20020814	CN 2001137149	A	20011024	200280

Priority Applications (No Type Date): JP 2000325534 A 20001025

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002128234	A		7	B65G-001/137	
US 20020069141	A1			G06F-017/60	
CN 1363905	A			G06F-017/60	

Physical distribution management system for inventory control, calculates
product insufficiency and *returnable* *package* insufficiency and
transmits corresponding admonition to manufacturer and seller
respectively

Inventor: *AGEKURA I*...

...*KAWAMURA S*...

...*KIMIZUKA O*...

...*URAI S*

Abstract (Basic):

... product inventory information and transmits product transport
admonition to the manufacturer. The manufacturer on receiving
returnable *package* from the seller calculates insufficiency of
returnable *package* based on stored *returnable* *package* *return*
information and transmits *returnable* *package* *return* admonition to
the seller.

... By calculating for insufficiency of product inventory and
returnable *package* and transmitting corresponding admonition to
manufacturer and seller respectively, the inventory control of the
returnable *package* and the product is performed effectively...

...Title Terms: *RETURN*;

...International Patent Class (Main): *G06F-017/60*

International Patent Class (Additional): *G06F-017/60*

29/3,K/11 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus
(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.

04661807 JICST ACCESSION NUMBER: 00A0589602 FILE SEGMENT: JICST-E

The dunnage for the motorcycle aluminum wheels.

KAWAMURA SO (1)

(1) NGK Insul., Ltd.

Hoso Gijutsu(JPI Journal), 2000, VOL.38,NO.6, PAGE.648-653, FIG.13, TBL.5,

REF.4

JOURNAL NUMBER: G0839AAS ISSN NO: 0385-728X
UNIVERSAL DECIMAL CLASSIFICATION: 621.869.82+621.869.88 621.798.1/.2
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication

KAWAMURA SO (1)

...ABSTRACT: was mass-produced for the physical distribution of the
motorcycle aluminum wheels. Reused and simple *packaging* and high load
efficiency which can correspond for all 17, 16 inch wheel are features

...DESCRIPTORS: industrial *packaging*; ...

...*container* transportation...

...*pallet*; ...

...assembly *packaging*; ...

...*pallet* handling

...BROADER DESCRIPTORS: *packaging*; ...

...*container*; ...

...*packaging* technology

29/AA,AN,AZ,TI/1 (Item 1 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

015514713

WPI Acc No: 2003-576860/

Electronic certificate system used for e.g. information provision service, checks for validity of electronic certificate, based on whether received request information satisfies specific condition

Local Applications (No Type Date): US 200259332 A 20020131; JP 2001346848 A 20011113

Priority Applications (No Type Date): JP 2001346848 A 20011113

29/AA,AN,AZ,TI/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014654824

WPI Acc No: 2002-475528/

Physical distribution management system for inventory control, calculates product insufficiency and *returnable* *package* insufficiency and transmits corresponding admonition to manufacturer and seller respectively

Local Applications (No Type Date): JP 2000325534 A 20001025; US 2001982991 A 20011022; CN 2001137149 A 20011024

Priority Applications (No Type Date): JP 2000325534 A 20001025

29/AA,AN,AZ,TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014511127

WPI Acc No: 2002-331830/

Expanded key schedule circuit for common key encryption system, has round processing circuits which subject common key or sub key of previous stage to round function, to output sub key

Local Applications (No Type Date): EP 2001305982 A 20010711; JP 2000211686 A 20000712; US 2001902696 A 20010712; KR 200141607 A 20010711; CN 2001143153 A 20010712; JP 2000211686 A 20000712

Priority Applications (No Type Date): JP 2000211686 A 20000712

29/AA,AN,AZ,TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014404655

WPI Acc No: 2002-225358/

Computer-implemented fishing game system allows predator-creature to bite hooked fish, based on whether the creature is within preset limits with respect to hooked fish

Local Applications (No Type Date): US 2001817445 A 20010326; CA 2342083 A 20010327; EP 2001302874 A 20010328; JP 200096041 A 20000331; JP 200096041 A 20000331; US 2001817445 A 20010326

Priority Applications (No Type Date): JP 200096041 A 20000331

29/AA,AN,AZ,TI/5 (Item 5 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014384569

WPI Acc No: 2002-205272/

Block data encryption apparatus for computer, includes diffusion module to diffuse and transmit data input between non-linear transformation modules through two routes

Local Applications (No Type Date): US 2001893785 A 20010629; JP 200168742 A 20010312

Priority Applications (No Type Date): JP 2000198478 A 20000630

29/AA,AN,AZ,TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

013921136

WPI Acc No: 2001-405349/

***Package* for tire, comprises protrusions in support board, around
internal circumference of hub hole of tire, for preventing shifting of
tire**

Local Applications (No Type Date): JP 99314697 A 19991105; DE 1054914 A
20001106; CN 2000133418 A 20001103; US 2000705934 A 20001106; IT
2000MI2377 A 20001102

Priority Applications (No Type Date): JP 99314697 A 19991105

29/AA,AN,AZ,TI/7 (Item 7 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

013568028

WPI Acc No: 2001-052235/

Arithmetic method and implementation for cryptographic processing

Local Applications (No Type Date): FR 2000680 A 20000120; JP 9911989 A
19990120; JP 99209831 A 19990723

Priority Applications (No Type Date): JP 99209831 A 19990723; JP 9911989 A
19990120

29/AA,AN,AZ,TI/8 (Item 8 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

011272345

WPI Acc No: 1997-250248/

**Electronic dictionary - has display control unit which converts
dictionary data into display data which is displayed by display unit**

Local Applications (No Type Date): JP 95255267 A 19951002; US 96671533 A
19960627

Priority Applications (No Type Date): JP 95172516 A 19950707; US 96671533 A
19960627

29/AA,AN,AZ,TI/9 (Item 1 from file: 34)
DIALOG(R)File 34:(c) 2004 Inst for Sci Info. All rts. reserv.

07806887

**Title: Complete nucleotide sequence, origin of isoform and functional
characterization of the mouse hepsin gene**

29/AA,AN,AZ,TI/10 (Item 2 from file: 34)
DIALOG(R)File 34:(c) 2004 Inst for Sci Info. All rts. reserv.

00312067

Title: INFLUENCE OF EXTRUSION ON THE PHYSIOLOGICAL-EFFECTS OF BRANS IN RATS

29/AA,AN,AZ,TI/11 (Item 1 from file: 94)
DIALOG(R)File 94:(c) 2004 Japan Science and Tech Corp(JST). All rts.
reserv.

04661807 JICST ACCESSION NUMBER: 00A0589602
The dunnage for the motorcycle aluminum wheels.

29/AA,AN,AZ,TI/12 (Item 2 from file: 94)
DIALOG(R)File 94:(c)2004 Japan Science and Tech Corp(JST). All rts.
reserv..

04608337 JICST ACCESSION NUMBER: 00A0615170
Specification and Assessment of the block cipher Hierocrypt.

29/AA,AN,AZ,TI/13 (Item 1 from file: 434)
DIALOG(R)File 434:(c) 1998 Inst for Sci Info. All rts. reserv.

03610073
Title: LIQUID CIRCULATION FLOW-RATE IN AERATION *TANK*

29/AA,AN,AZ,TI/14 (Item 1 from file: 5)
DIALOG(R)File 5:(c) 2004 BIOSIS. All rts. reserv.

0004272031 BIOSIS NO.: 198478007438
INTRA CELLULAR INJECTION OF CYCLIC GMP INCREASES SODIUM CONDUCTANCE IN
GECKO GEKKO-GECKO PHOTO RECEPTORS

29/AA,AN,AZ,TI/15 (Item 1 from file: 248)
DIALOG(R)File 248:(c) 2004 Pira International. All rts. reserv.

00231844 Pira Acc. Num.: 10075781
Title: SYNTHETIC PAPER

29/AA,AN,AZ,TI/16 (Item 1 from file: 144)
DIALOG(R)File 144:(c) 2004 INIST/CNRS. All rts. reserv.

14269515 PASCAL No.: 99-0473579
Model experiment on mechanical response of seabed-coastal structure
system to ocean wave
Earthquake geotechnical engineering

?show files;ds
File 347:JAPIO Nov 1976-2003/Nov(Updated 040308)
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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200419
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File 371:French Patents 1961-2002/BOPI 200209
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Set	Items	Description
S1	7365389	MANAGEMENT OR MANAG??? OR TRACK??? OR CONTROL? ? OR CONTRO- LL? OR HANDL??? OR COORDINAT??? OR MONITOR??? OR PROCESS???
S2	496784	RETURN? OR REUSABLE OR RE()USABLE OR REUSEABLE OR REUSING - OR REUSES OR RECYCL? OR REVERT??? OR (SEND??? OR TAK???) ()BACK OR LENT OR LOAN??
S3	2201746	CONTAINER? ? OR RECEPTACLE? ? OR HOLDER? ? OR TANK? ? OR P- ALLET OR CONTAINERI??? OR CRATE? ? OR TRAY OR TRAYS OR BARREL- ?? OR DRUM? ? OR BOX?? OR PACKAGE? ? OR PACKAGING OR MAILER? ?
S4	548837	SUFFICIENT OR ENOUGH OR ADEQUATE OR AMPLE OR SOME
S5	1702996	ON()HAND OR AVAILABLE OR INVENTORY OR SUPPLY OR IN()STOCK - OR READY OR ACCESSIBLE OR WAITING OR PREPARED OR (AS OR WHEN)- (2W) (NEEDED OR REQUIRED) OR JUST(2W)TIME OR JIT
S6	33198	S2(5N)S3
S7	7589	S4(5N)S5
S8	4	S1(S)(S6(S)S7)
S9	11	S6(S)S7
S10	7	S9 NOT S8
S11	11458	S6(S)(S1 OR S4 OR S5)
S12	4553	S6(S)(S4 OR S5)
S13	1646	S6(10N)(S4 OR S5)
S14	485	S1(S)S13
S15	195	S1(10N)S13
S16	198	S6(S)(S4 AND S5)
S17	28	S1(10N)S16
S18	2880	S1(10N)S6
S19	26	S17 NOT (S8 OR S9)
S20	12	S18 AND S19
S21	14	S18(S)(S4 AND S5)
S22	12	S21 NOT (S8 OR S9)
S23	287	S3(10N)S7
S24	11	S2(S)S23
S25	7	S24 NOT (S8 OR S9 OR S22)
S26	1489321	CONTAINER? ? OR PALLET OR CONTAINERI??? OR CRATE? ? OR TRAY OR TRAYS OR BARREL?? OR DRUM? ? OR BOX?? OR PACKAGE? ? OR PA- CKAGING OR MAILER? ?
S27	14358	S2(5N)S26
S28	1	S1(S)(S27(S)S7)
S29	2	S7(S)S27
S30	266831	IC=G06F-017?
S31	150	S27 AND S30
S32	51	S31(10N)(S1 OR S4 OR S5)
S33	15	S31(10N)(S4 OR S5)
S34	15	S33 NOT (S8 OR S9 OR S22)
S35	15	IDPAT (sorted in duplicate/non-duplicate order)
S36	13	IDPAT (primary/non-duplicate records only)

3/25/04 *[Signature]* Revised

36/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015787197 **Image available**
WPI Acc No: 2003-849400/200379
XRPX Acc No: N03-678970

Container recycling system e.g. for plastic container, includes recycling unit which recovers containers from customer and replenishes to product unit

Patent Assignee: KYORAKU CO LTD (KYKO)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003321121	A	20031111	JP 2002128927	A	20020430	200379 B

Priority Applications (No Type Date): JP 2002128927 A 20020430

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2003321121	A		5	B65G-061/00	

Abstract (Basic):

... recycling unit (4) sterilizes and supplies the containers recovered from a customer through a container *supply* route (8). The product unit receives replenishment *containers* from a *recycling* *container* replenishment route (9). The product is distributed to the customer (3) through a product distribution...

36/3,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014934243 **Image available**
WPI Acc No: 2002-754952/200282
XRPX Acc No: N02-594766

***Recycled* storage *container* *inventory* control system determines recovery prediction data of used goods storage container based on stock data specifying number of containers circulated between user and manufacturer**

Patent Assignee: ITOU KK (ITOU-N)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002269196	A	20020920	JP 200167497	A	20010309	200282 B

Priority Applications (No Type Date): JP 200167497 A 20010309

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002269196	A		5	G06F-017/60	

***Recycled* storage *container* *inventory* control system determines recovery prediction data of used goods storage container based on stock data...**

36/3,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

014654824 **Image available**
WPI Acc No: 2002-475528/200251
XRPX Acc No: N02-375353

Physical distribution management system for *inventory* control, calculates product insufficiency and *returnable* *package* insufficiency

and transmits corresponding admonition to manufacturer and seller
respectively

Patent Assignee: NGK INSULATORS LTD (NIGA); ASAHI TEC KK (ASAI); MEIKO
KAIUN KK (MEIK-N)

Inventor: AGEKURA I; KAWAMURA S; KIMIZUKA O; URAI S

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002128234	A	20020509	JP 2000325534	A	20001025	200251 B
US 20020069141	A1	20020606	US 2001982991	A	20011022	200260
CN 1363905	A	20020814	CN 2001137149	A	20011024	200280

Priority Applications (No Type Date): JP 2000325534 A 20001025

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002128234	A		7	B65G-001/137	
US 20020069141	A1			G06F-017/60	
CN 1363905	A			G06F-017/60	

Physical distribution management system for *inventory* control,
calculates product insufficiency and *returnable* *package* insufficiency
and transmits corresponding admonition to manufacturer and seller
respectively

Abstract (Basic):

... By calculating for insufficiency of product *inventory* and
returnable *package* and transmitting corresponding admonition to
manufacturer and seller respectively, the *inventory* control of the
returnable *package* and the product is performed effectively...

36/3,K/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014280933 **Image available**

WPI Acc No: 2002-101634/200214

XRPX Acc.No: N02-075437

Recyclable container management system e.g. for beer barrels, collects
product ID, receiving date and delivery date information of each
container from bar-code readers, and manages collected information

Patent Assignee: NIPPON STEEL CORP (YAWA); SAPPORO BREWERIES LTD (SAPB)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001341814	A	20011211	JP 2000169204	A	20000606	200214 B

Priority Applications (No Type Date): JP 2000169204 A 20000606

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001341814	A		12	B65G-001/137	

Abstract (Basic):

... Since information about product ID, receiving date and delivery
date of containers are collected, *inventory* control information is
exactly obtained and *recyclable* *container* information is
efficiently collected and managed...

36/3,K/11 (Item 11 from file: 347)

DIALOG(R)File 347:JAPIO

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07573819 **Image available**

DRUM MANAGEMENT SYSTEM AND DRUM LEASE SYSTEM

PUB. NO.: 2003-067660 [JP 2003067660 A]
PUBLISHED: March 07, 2003 (20030307)
INVENTOR(s): YOSHIARA HISATO
NAKADA TOSHIO
IWASAKI KUNIO
KONO KATSUTAKA
KUSANAGI MASATO
APPLICANT(s): FURUKAWA ELECTRIC CO LTD:THE
TEPCO LOGISTICS CO LTD
APPL. NO.: 2002-160349 [JP 2002160349]
FILED: May 31, 2002 (20020531)
PRIORITY: 2001-168348 [JP 2001168348], JP (Japan), June 04, 2001
(20010604)

ABSTRACT

... provide a drum management system and a drum lease system capable of generally performing even *inventory* management of wires or the like wound around *drums* by establishing *recycle* use of the *drums* and managing the drums.

SOLUTION: Information regarding transactions of the drums is gathered in a ...

36/3,K/12 (Item 12 from file: 347)
DIALOG(R)File 347:JAPIO
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07376651 **Image available**
CONTAINER COLLECTION SYSTEM AND INFORMATION PROCESSOR

PUB. NO.: 2002-245151 [JP 2002245151 A]
PUBLISHED: August 30, 2002 (20020830)
INVENTOR(s): SHIMAMURA MITSURU
MIYAKE TAKASHI
APPLICANT(s): SUMITOMO SEIKA CHEM CO LTD
APPL. NO.: 2001-036602 [JP 200136602]
FILED: February 14, 2001 (20010214)

[Bad Date]

ABSTRACT

...and conveniently notify container return.

SOLUTION: In this container collection system for collecting an unneeded *container* at the demander and *returning* the *container* to its *supply* source, the company network server S2 of the *supply* source receives *return* information transmitted to notify *container* *return* from demander communication terminal devices D1 and D2 via the Internet. The communication terminal device...

36/AN,AZ,TI/1 (Item 1 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

015787197

Container recycling system e.g. for plastic container, includes recycling unit which recovers containers from customer and replenishes to product unit

Local Applications (No Type Date): JP 2002128927 A 20020430

Priority Applications (No Type Date): JP 2002128927 A 20020430

36/AN,AZ,TI/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014934243

Recycled storage *container* *inventory* control system determines recovery prediction data of used goods storage container based on stock data specifying number of containers circulated between user and manufacturer

Local Applications (No Type Date): JP 200167497 A 20010309

Priority Applications (No Type Date): JP 200167497 A 20010309

Bad Date

36/AN,AZ,TI/3 (Item 3 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014757762

Container rental service management device has server that charges supplier to pay *loan* charge for period between *container* delivery date and *supply* completion date and charges customer to pay rental charge

Local Applications (No Type Date): JP 2000315631 A 20001016

Priority Applications (No Type Date): JP 2000315631 A 20001016

36/AN,AZ,TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014686948

Cremation repository operation method involves operating robot to deliver container of cremated remains to predetermined location *accessible* by requested patron and to *return* *container* in unaltered state to storage location

Local Applications (No Type Date): US 2000235811 P 20000927; US 2001963830

A 20010925; WO 2001US42395 A 20010927; AU 200196941 A 20010928; US

2000235811 P 20000927; US 2001963830 A 20010925

Priority Applications (No Type Date): US 2000235811 P 20000927; US 2001963830 A 20010925

36/AN,AZ,TI/5 (Item 5 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014654824

Physical distribution management system for *inventory* control, calculates product insufficiency and *returnable* *package* insufficiency and transmits corresponding admonition to manufacturer and seller respectively

Local Applications (No Type Date): JP 2000325534 A 20001025; US 2001982991

A 20011022; CN 2001137149 A 20011024

Priority Applications (No Type Date): JP 2000325534 A 20001025

36/AN,AZ,TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014519804

Returnable containers tracking system for paper mill, calculates cost for
usage of container, based on time when container is in control of user
Local Applications (No Type Date): CA 2354464 A 20010730
Priority Applications (No Type Date): US 2000630259 A 20000801

36/AN,AZ,TI/7 (Item 7 from file: 350)

DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014478840

Cable drum management system for cable transportation line, generates
inventory chart and non-*returnable* *drum* chart periodically, based
on the log and control files
Local Applications (No Type Date): JP 2000238851 A 20000807
Priority Applications (No Type Date): JP 2000238851 A 20000807

36/AN,AZ,TI/8 (Item 8 from file: 350)

DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014375311

Computer-based document processing method for document management and
publication, uses reusable packages and components which are created and
stored along with descriptive information
Local Applications (No Type Date): WO 2001GB3395 A 20010730; AU 200178575 A
20010730; EP 2001956651 A 20010730; WO 2001GB3395 A 20010730
Priority Applications (No Type Date): US 2000627798 A 20000728

36/AN,AZ,TI/9 (Item 9 from file: 350)

DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

014280933

Recyclable container management system e.g. for beer barrels, collects
product ID, receiving date and delivery date information of each
container from bar-code readers, and manages collected information
Local Applications (No Type Date): JP 2000169204 A 20000606
Priority Applications (No Type Date): JP 2000169204 A 20000606

36/AN,AZ,TI/10 (Item 10 from file: 350)

DIALOG(R)File 350:(c) 2004 Thomson Derwent. All rts. reserv.

013410200

Library management system has hard disks and detector to store
information and extracted books and empty space *available* in
containers, based on which the *returned* books are stored in
containers
Local Applications (No Type Date): JP 9932440 A 19990210; JP 9932440 A
19990210
Priority Applications (No Type Date): JP 9932440 A 19990210

36/AN,AZ,TI/11 (Item 11 from file: 347)

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07573819

DRUM MANAGEMENT SYSTEM AND DRUM LEASE SYSTEM

APPL. NO.: 2002-160349 [JP 2002160349]
PRIORITY: 2001-168348 [JP 2001168348], JP (Japan), June 04, 2001
(20010604)

36/AN,AZ,TI/12 (Item 12 from file: 347)
DIALOG(R)File 347:(c) 2004 JPO & JAPIO. All rts. reserv.

07376651
CONTAINER COLLECTION SYSTEM AND INFORMATION PROCESSOR

APPL. NO.: 2001-036602 [JP 200136602]

36/AN,AZ,TI/13 (Item 13 from file: 347)
DIALOG(R)File 347:(c) 2004 JPO & JAPIO. All rts. reserv.

05121749
BOOK STORAGE MANAGEMENT DEVICE

APPL. NO.: 06-209668 [JP 94209668]

01702285/9

DIALOG(R)File 570:Gale Group MARS(R)
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01702285 Supplier Number: 53229898 (THIS IS THE FULLTEXT)

SAAB, M-B SELL ACCESSORIES ONLINE.

WASHINGTON, FRANK S.

Automotive News, p20(1)

Nov 16, 1998

ISSN: 0005-1551

Language: English Record Type: Fulltext

Document Type: Tabloid; Trade

Word Count: 318

TEXT:

Although state franchise laws prevent automakers from selling cars on the Internet, nothing stops them from selling other merchandise on their Web sites.

Saab Cars USA Inc. and Mercedes-Benz of North America Inc. are pitching their accessory catalogs on the World Wide Web.

Saab has put the entire contents of its 76-page accessory catalog, from sunglasses to sunroof wind deflectors, on its Web site.

The automaker expects online sales of \$500,000 in 1998, its first full year of what it calls consumer direct marketing. Ten percent of every online order goes to the Saab dealer in the corresponding ZIP code. Shoppers who order Saab automotive accessories can have them shipped directly to dealers for installation.

After a year of operation, Saab found:

- * Visitors per month number 6,000.
- * Five percent of them place orders.
- * Average sale per customer is \$125.

"We are adding a number of cross-promotional links," said Mike Kornowa, Saab's accessory marketing manager. "For example, in our (online) catalog, we retail Scandinavian designer Sigrid Olsen's clothing. Conversely, she has a link to the saabcatalog.com Web site on her sigridolsen.com site."

Mercedes-Benz upgraded its online catalog last week.

The automaker has added accessories based on its models, not just the overall Mercedes-Benz brand. Shoppers can now buy C-class, E-class, S-class and M-class apparel.

The new setup also lets shoppers choose automotive accessories from the online catalog as they are configuring the vehicle they want to buy.

"I'm not going to tell you that we're profitable," said Bill Hurley, manager of new media and relationship marketing at Mercedes-Benz. "We didn't start (merchandising online) to make money. We want to support the brand."

But Hurley said Mercedes-Benz will increase advertising for its online catalog beginning with the Christmas season.

"Every manufacturer has to develop a (catalog) on its Web site," Hurley said. "You have to be a player and focus on what the customer needs."

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Subscription: \$85.00 per year. Published weekly. 965 East Jefferson Avenue, Detroit, MI 48207-9966.

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PUBLISHER NAME: Crain Communications, Inc.

COMPANY NAMES: *Mercedes-Benz; Saab Cars USA Inc.

EVENT NAMES: *240 (Marketing procedures)

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PRODUCT NAMES: *5012000 (Autos & Motor Vehicles Whsle)

INDUSTRY NAMES: AUTO (Automotive)

NAICS CODES: 42111 (Automobile and Other Motor Vehicle Wholesalers)

SPECIAL FEATURES: LOB; COMPANY
ADVERTISING CODES: 55 Company Planning/Goals
? b 350

25mar04 11:37:13 User267143 Session D160.2
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\$3.45 1 Type(s) in Format 9
\$3.45 1 Types
\$4.29 Estimated cost File570
\$0.75 TELNET
\$5.04 Estimated cost this search
\$5.54 Estimated total session cost 0.322 DialUnits

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200419
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Enter HELP NEWS 331 for details.

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? t 014280933/9

014280933/9
DIALOG(R)File 350:Derwent WPIX
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014280933 **Image available**
WPI Acc No: 2002-101634/200214
XRPX Acc No: N02-075437

Recyclable container management system e.g. for beer barrels, collects product ID, receiving date and delivery date information of each container from bar-code readers, and manages collected information
Patent Assignee: NIPPON STEEL CORP (YAWA); SAPPORO BREWERIES LTD (SAPB)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001341814	A	20011211	JP 2000169204	A	20000606	200214 B

Priority Applications (No Type Date): JP 2000169204 A 20000606

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001341814	A		12	B65G-001/137	

Abstract (Basic): JP 2001341814 A

NOVELTY - Bar-code readers (50a,50b) are provided near cargo collection controller (111) and production controller (112), respectively. Receiving and delivery management servers (20,30) collect receiving and delivery dates and product ID of containers from corresponding bar-code readers. A management server (10) collects product ID and receiving/delivery date information from the servers (20,30), and manages the collected information.

USE - For managing information about recyclable container such as beer barrels, propane gas containers, etc.

ADVANTAGE - Since information about product ID, receiving date and delivery date of containers are collected, inventory control information is exactly obtained and recyclable container information is efficiently collected and managed.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of container recycling management system. (Drawing includes non-English language text).

Management server (10)

Receiving and delivery management servers (20,30)
Bar-code readers (50a,50b)
Cargo collection controller (111)
Production controller (112)
pp; 12 DwgNo 1/7
Title Terms: RECYCLE; CONTAINER; MANAGEMENT; SYSTEM; BEER; BARREL; COLLECT;
PRODUCT; ID; RECEIVE; DATE; DELIVER; DATE; INFORMATION; CONTAINER; BAR;
CODE; READ; MANAGE; COLLECT; INFORMATION
Derwent Class: Q32; Q35; T01; T04
International Patent Class (Main): B65G-001/137
International Patent Class (Additional): B65D-025/20; G06F-017/60;
G06K-007/00; G06K-007/10; G06K-019/00; G06K-019/06
File Segment: EPI; EngPI
Manual Codes (EPI/S-X): T01-J05A; T04-A03B1
? b 13

25mar04 11:37:35 User267143 Session D160.3
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\$3.16 1 Type(s) in Format 9
\$3.16 1 Types
\$5.43 Estimated cost File350
\$0.24 TELNET
\$5.67 Estimated cost this search
\$11.21 Estimated total session cost 0.487 DialUnits

File 13:BAMP 2004/Mar W2
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? t 1181240/9

1181240/9
DIALOG(R)File 13:BAMP
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1181240 Supplier Number: 02599969 (THIS IS THE FULLTEXT)
Are Reusable Containers Worth the Cost?
(Although returnable container programs can be costly and hard to manage,
they have brought great benefits to the automotive industry)
Article Author(s): Witt, Clyde E
Transportation & Distribution, v 41, n 9, p 105-108
September 2000
DOCUMENT TYPE: Journal ISSN: 0895-8548 (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1500

TEXT:
CONTAINER QUESTIONS IN THE AUTOMOTIVE INDUSTRY CENTER ON RETURNABILITY, NOT
REUSABILITY.

By Clyde E. Witt

photo omitted

The automotive industry has long been the standard-bearer for returnable container programs. All the car companies and their Tier 1 suppliers continue to see value in using, and reusing, containers. Most admit, although not always publicly, that returnable container programs are costly and difficult to manage. In spite of the hassle, returnable container programs bring great benefits to companies and to the industry in general. The experience of nearly 15 years has helped smooth the speed bumps for most container users and suppliers.

"Our industry spends millions of dollars for returnable and reusable containers to carry and protect billions of dollars worth of automotive parts and assemblies each year," says Randy Stout, manager of containerization for General Motor's North American Operations.

Stout is also chair of the Automobile Industry Action Group's (AIAG) Plastic Container Performance Work Group. He says, "Container selection is critical to the success of a project. Poor decisions can result in unnecessary rework or replacement costs and delays."

Stout's group has been working on a set of guidelines to establish a standard benchmark by which buyers can evaluate container products and ultimately make better decisions.

CONTAINERS AND JIT

Although the focus on types of containers appears to be shifting somewhat within the automotive industry, the purpose of the containers remains consistent. In fact, it's hard to imagine Just-In-Time (JIT) as it exists today in auto plants, without reusable containers.

photo omitted

Dan Huhn, senior product manager, ORBIS, says the returnable container has been the enabler of JIT production techniques for many years. Now, smaller containers are emphasizing that point.

"Automotive manufacturers are looking to deliver the minimum amount of inventory to the right spot on the assembly line," says Huhn, "and hand held containers are the way to do it."

Size doesn't matter when it comes to reusable containers. Although there are more small containers showing up in returnable container programs, workhorse products like reusable steel racks will always be around. Matt Shuert of Shuert Industries says its mammoth Uni-Case, which weighs in at 175 lbs, empty, is finding a lot of new users.

"People still have to move heavy parts, like heating and air conditioning units," says Shuert, "and this clamshell-design case offers a secure, clean way of moving big, heavy things."

Along with the growth of JIT came the reduction in suppliers to the automotive plants. Dr. Diana Tweede, associate professor, School of Packaging, Michigan State University, says JIT, along with reduced suppliers and attempts to reduce the geographical distance between supplier and user, has favored returnable packaging.

"These factors favor the use of returnables because they increase control, reduce transport costs and reduce the required safety stocks," says Tweede.

The other trend making an impact on packaging in the automotive industry has been called lean manufacturing--among other names. Basically it's a tightening of the supply chain. You only do the things that will add value

to your part of the supply chain, or what some call the value chain.

Optimizing the supply chain means taking the big picture point of view. For returnable containers this means planning an entire program, not purchasing a container and shipping parts.

Along with ergonomic and safety issues such as lighter loads and reduced chances for knife cuts, "soft" issues like cleanliness are playing a larger role in the auto plants and driving the implementation of returnable container programs.

Because there is less inventory at line side, assembly lines can be shortened, thus requiring less time to build cars. Reduced inventories, along with modularity of many automotive assemblies, have also led to reconfiguring workstations along the line.

JUSTIFYING THE EXPENSE

In the early days of returnable container systems, companies did extensive studies on return-on-investment, net-present-value and other justifications to convince management that returnables were the way to go. General Motors, for example, has a reported \$1.4 billion investment in returnable containers.

Today, some material handling managers still have to jump through the hoops held up by those on the financial side of the business. Other companies take a less structured view--a simple payback method that indicates they'll get money back in two years, for instance. The more enlightened companies are just doing it.

Managers are instituting returnable programs because they've seen that it's the right thing to do. Reducing the amount of corrugated (costly to get rid of) and the reduction in injuries show quick paybacks. Managers see the installation of returnable containers as a one-time investment rather than an on-going, fluctuating cost.

Managing returnable containers is a challenge since the containers are literally a moving target. It's not uncommon for one user of a container to pass it on down the supply chain, not to return it as was intended. Also, if an automaker decides to keep the parts in inventory longer than intended, it will require more containers in the system to meet demand requirements. Various companies have different re-supply programs, but most shoot for several hours of parts to be at line side. If production stalls for even one day, the number of containers in the "float" is drastically affected.

Tracking is not a new problem. In fact, the problem has been around since the first programs when containers started "disappearing" and many autoworkers started carrying strange-looking fishing tackle boxes and lunch boxes.

In 1991, AIAG wrote a standard for container tracking that still waits for implementation. The apparent pothole in the road to tracking is how to handle the reverse logistics part of the program. But that may be changing with new software and systems providers entering the automotive arena.

photo omitted

What's the solution to better container tracking? Some experts say when the price of radio frequency identification (RFID) chips drop, the RFID chip will be the answer. Others say the answer lies with third-party service providers. Still, another camp says it will take both and the auto

companies will have to get out of the packaging business and concentrate on what they do best -- build cars.

WHEN TO ADOPT A PROGRAM

In the automotive industry, the most convenient time to begin a returnable container program is at the start of a new model build. Although lead-time on new car introduction has been halved in the past few years, it still takes a while for Tier 1 and Tier 2 suppliers to gear up. An interesting trend in the industry is for more consistency in the size of containers, using more specialized dunnage to adapt different parts to the inside. All the container manufacturers have engineers who assist in developing a program and finding the right container/pallet combination. The importance of this assistance from the container manufacturer has grown as automotive companies have put more emphasis on core competencies--building cars--and less on packaging engineering.

The level of assistance provided by the container manufacturers varies from consultation to actual hands-on applications where the container manufacturer stations employees at the customer's facility to implement the program. In the more extensive programs, the auto company will turn over the entire program to the container manufacturer or a third party. In that case, all the packaging material, regardless of manufacturer, is taken care of by people not employed by the auto company.

Some of these third-party services have become quite sophisticated. Container and Pallet Services (CAPS) is a container and pallet rental service that manages fleets of containers and tracks them through its proprietary, Internet-based tracking system, CAPS-TRAC.

Spencer Hoopes, founder and CEO, says CAPS helps companies that recognize the desirability of using returnable packaging systems but are hesitant to own and manage the assets themselves.

"For example," says Hoopes, "we're currently the only company in our industry able to offer a tracking service to companies assembling products in Mexico and shipping finished products back to the US for final assembly."

The CAP's system offers container tracking and management through a variety of productivity reports available to customers via the Internet.

Another full-service returnable packaging provider is Menasha Services. Kevin Shanley, marketing director, says it offers an enterprise solution to returnable packaging.

"We're working with Tier 2 to Tier 1 to final assembly supply chains," says Shanley, "any place supply chain management is needed."

The company does everything: financing a returnable container program, transportation, cross-docking, line sequencing and more. Menasha Services has an Internet-based program that helps the customer know not only where containers are, but where parts are.

"The beauty of an Internet-based program," Shanley says, "is that when the manufacturer sends its broadcast down to the Tier 1 supplier, we receive a communication at our service center that tells us how many containers will be required, and when, by the Tier 1 company."

As Tweede says, "This is an interesting time for logistical packaging. As logistical systems evolve and become better organized, there are new opportunities for using packaging to add value and minimize cost."

Clyde E. Witt is executive editor of T&D's sister publication, Material Handling Management.

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COMPANY DEPARTMENT NAME: Operations
INDUSTRY NAMES: Automotive; Metal packaging; Packaging; Plastic packaging
PRODUCT NAMES: Wood containers (244000); Plastics packaging except film, sheet, foam, bottles (308936); Metal shipping barrels, drums, kegs, and pails (341200); Motor vehicles and equipment (371000)
CONCEPT TERMS: Operations; Packaging; Trends
GEOGRAPHIC NAMES: United States (USA)
? b 484

25mar04 11:38:07 User267143 Session D160.4
\$1.42 0.264 DialUnits File13
\$3.40 1 Type(s) in Format 9
\$3.40 1 Types
\$4.82 Estimated cost File13
\$0.24 TELNET
\$5.06 Estimated cost this search
\$16.27 Estimated total session cost 0.751 DialUnits

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DIALOG(R)File 484:Periodical Abs Plustext
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04787042 SUPPLIER NUMBER: 55372149 (THIS IS THE FULLTEXT)
Recycling continues ascent in pallet business
Block, Dave
BioCycle (IBIC), v41 n6, p30-33, p.4
Jun 2000
ISSN: 0276-5055 JOURNAL CODE: IBIC
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2131

ABSTRACT: Over 4.5 billion board feet of hardwood and over one billion board feet of softwood are used annually to make new pallets. The main determining factor in pallet reuse and recycling is whether a retrieval system is in place.

TEXT:
The end of the throwaway pallet is near as pallet wood is used to remanufacture new ones, recycled into mulch, readied for home construction and other markets.

Reusable wood is separated from the pallets by an unnailler (above left) as part of the process of putting repaired pallets (right) back into circulation.

ACCORDING to the Mississippi State Forest Products Laboratory, the nation manufactured 454 million new pallets last year. A 1995 report from

the U.S. Forest Service estimates a pallet recycling rate of slightly over 50 percent. Over 4.5 billion board feet of hardwood and over one billion board feet of softwood are used annually to make new pallets. Considering that many are repaired multiple times, there may be a total of two billion pallets in circulation. (The Forest Service's next report is scheduled to be released later this year.)

After expenses like nails, labor, transportation and overhead are totaled, the other 60 percent of the cost of a new pallet is the wood. This provides a strong incentive for the industry to reuse and recycle pallets and their boards whenever possible, notes Bob Peters of the National Wooden Pallet & Container Association.

Many pallets are designed to last only a few trips, while even the sturdiest ones can be damaged by a forklift or contaminated by spilled material after only one use. According to Phil Araman, a research project leader with the U.S. Forest Service, a number of factors make pallets ideal for recycling: "Collection is aided by the tendency for pallets to accumulate in urban areas; Pallets can be disassembled easily and most of the component parts can be reused; Many pallets contain standard-sized parts; Repairs using metal plates can restore the strength of the pallet to levels equal to or greater than when new; Ground or chipped pallet wood has properties that allow it to be used in a variety of products; and Used pallets are available in ample quantities."

The main determining factor in pallet reuse or recycling is whether a retrieval system is in place. One common arrangement is for a distribution center to ship products to a retail customer and receive the empty pallets back in the same truck. "On the other end of that spectrum, if I buy a refrigerator and the delivery person takes it off the truck with a forklift, the pallet under the refrigerator probably won't be returned," says Peters. "It works the same as whether you have one aluminum can or 50 pounds of cans. If there is enough volume to make it worth the transportation cost, they will get recycled. The distribution system doesn't accommodate chasing one pallet."

The best chance for these single pallets to be recycled is for the local landfill to dedicate roll-off boxes for used wood. According to the Forest Service, 223.6 million pallets entered landfill facilities in 1995, compared to 171 million at pallet firms. Approximately 37.9 million pallets were recovered at landfills, which can sell the wood to various outlets or grind and use it on-site as daily cover or as road material to cut down on dust.

REPAIR AND REMANUFACTURING

When recovery is not an obstacle, the best recycling option for pallets is within the industry itself. "Obviously, our members would prefer to take a pallet in need of repair and create another pallet from it," says Peters. Repaired pallets are ones that had one or a few damaged components, such as split, cracked, or half-missing boards. Those pieces are stripped off and replaced. "For the vast majority of our recycling members, they want to get pallets with only one or two busted members, replace them and get them out the door," he adds.

Remanufacturing pallets is less common and involves extra steps. Machinery is used to cut nails and enable boards of damaged pallets to be taken apart. Remanufactured pallets generally are made of renailed, used lumber with new nails or staples holding them together. "If the used lumber is intact, the dry wood is generally stronger than the green wood that goes into most new pallets," says Peters. "A remanufactured pallet is a pretty secure, strong item." A recent trend is production of "combo" pallets joining a new stringer (the side beams) with a used deck-- board (the top and bottom boards), or vice versa.

Pallet prices vary depending on size and quality, but the hierarchy starts with new pallets at the top, followed by remanufactured and then repaired. "Refurbishing a pallet with only one or two bad boards and putting in new ones, or even used ones that are in good shape, is a good

deal," notes Peters. While pallets always have been repaired, the practice has intensified. "In the last five years, our customers increasingly have said that they want to spend less," he adds. "At some point, you have to finally say, 'I really can't make you a new one for that price, but I can build you a used one.'" On the other hand, pricing pressures also have led to a decline in the quality of many new pallets as some producers have been forced to cut corners, which decreases the pool of quality pallets that can be repaired to good condition.

About 15 percent of the 1.5 million pallets recycled annually by Pallet Resource of North Carolina are ground into usable wood fiber.

The need to repair and remanufacture pallets is heightened by the fact that manufacturers compete for their lower-grade lumber supplies with producers of railroad ties, furniture frame stock, fence posts and flooring. Material requirements are great: 38 percent of the hardwood and six percent of the softwood harvested in the U.S. goes to pallet production, according to the Forest Service.

Unlike the early days of the business, when pallet manufacturers and recyclers were different entities, many pallet companies make new and recycled pallets while concentrating heavily on one aspect. Manufacturers once looked at the recyclers as "junk dealers," yet the manufacturers sourced their wood from the low end of the sawmill supply, so the sawmills saw the pallet manufacturers as "junk dealers." "Customers encouraged their suppliers to get involved with taking pallets off their hands, so many manufacturers got involved with recycling that way," says Edward Brindley, publisher of Pallet Enterprise.

HOME CONSTRUCTION AND GROUND WOOD

A little more than a third of pallets are 48 inches long by 40 inches wide, the size generally used by the grocery industry. There are scores of other pallet configurations, however, which complicate the recycling process. In some cases, boards of uncommon dimensions are cut for pallet repair or remanufacturing. Another option is to use the wood outside the pallet industry. Although a drop in international markets has led to strong overall wood availability in the U.S., regional pockets of limited supply exist, such as the upper Midwest, where the new and remodeled housing market is booming. This has opened the door slightly for pallet boards to be used for hardwood flooring in such areas.

The Southern Research Station of the U.S. Forest Service, located at Virginia Tech, is doing tests on use of higher-end pallet boards in paneling and flooring. "The wood looks absolutely great," says Araman. "One of the nice things is that after the green wood is nailed to a pallet, it dries and the stresses on it are relieved. It's almost as dry as you need it when the board is taken off the pallet, and it will stay more straight then if you had used the wood in paneling originally."

Most boards do not have such a local reuse option, however, or are too damaged and wind up getting ground with pallet cuttings and scraps. In a 1997 survey of 205 pallet recyclers by Pallet Profile Weekly, the breakdown of ground fiber markets was: fuel, 26.6 percent; uncolored mulch, 25.8 percent; animal bedding, 17.5 percent; colored mulch, 11.9 percent; higher valued-- added mulch products, 10.5 percent; other, 5.5 percent; and biosolids compost amendment, 2.2 percent.

Markets for used pallet wood have been growing in recent years, notes Bob De Souza, general manager of West Salem Machinery, a Manufacturer of pallet recycling equipment. "In the Pacific Northwest, for example, the particleboard industry has looked for a new source of wood fiber and made a good marriage with pallet recyclers. One area just opening up is medium density fiberboard plants that use 'urban wood.' Wood fiber values are rising in part because of the paper industry's recovery. Using urban wood allows you to site the panel making business closer to the consumer, as opposed to the Southeastern and Pacific Northwest plants that ship product to urban centers."

Pallets are disassembled for reuse of the components. New outlets for

recovered wood include hardwood flooring in new and remodeled homes.

Pallet Resource of North Carolina has spent considerable time and money over the last five years to develop a market for its ground wood residuals, which comprise about 15 percent of the approximately 1.5 million pallets/year it recycles. (Another 15 percent are disassembled for component reuse and the rest are repaired.) The company has attended landscaping trade shows, given product away and put material on consignment.

Ground pallet wood is used for landscaping mulch (above right) and as playground surface material (below right).

Ground pallet wood is used for landscaping mulch (above right) and as playground surface material (below right).

Workers hand feed the cleaner, smaller pallet scraps to a horizontal electric hammermill that produces one-inch minus chips marketed as playground surface material, explains owner Neál Grimes. The larger, dirtier pallet pieces are run through a Morbark tub grinder to 2.5-inch minus for sale as colored mulch. Pallet Resource is in the process of installing a Wood'N Colors dyeing machine to boost production. Both products are sold to the wholesale market and together comprise about ten percent of the company's gross sales.

Unlike this scenario, for many pallet recyclers, wood residuals present an expensive disposal problem. Grinding equipment requires a significant capital investment for a small company, and landfills increasingly are banning wood. For some, the answer is to pay a company like Pallet Resource, which takes some wood for grinding from smaller pallet companies. According to the Pallet Profile Weekly survey, 28 percent of respondents used a grinder to generate wood fiber in 1997.

Pallet recycling growth among the survey respondents continued to expand at 18.2 percent in 1997, the last year for which data is available. However, lack of standardization and quality control are obstacles to continued success. The National Wooden Pallet and Container Association is seeking to address these issues through its Certified Pallet Recycler program.

Little in the way of pallet recycling networks are emerging in the U.S., stymied by the independent spirit of the industry. Given the ease in which a low-quality pallet recycling operation can be established, suppliers may face an uphill battle with customers seeking quality guarantees for recycled pallets. But meanwhile, economic incentives will continue boosting the rate of pallet repair and remanufacturing, perhaps hastening the end of the throwaway pallet.

For more information on the pallet recycling survey, contact Pallet Profile Weekly at (804) 740-1567.

RENTAL AND PLASTIC PALLETS

ANOTHER challenge to pallet recyclers is the emergence of Chep, a multinational company that brought its system of rental pallets to the U.S. in the early 1990s after gaining a foothold in the international market. Chep operates a system with more than 122 million pallets (painted blue) in 31 countries. Unlike most companies, Chep retains ownership of its pallets, which are returned to the nearest company depot after being emptied, explains Edward Brindley, publisher of Pallet Enterprise. Typically, the pallets go no further than grocery distribution centers, with the exception of retail warehouse stores that sell large quantities of products to consumers.

There are over 30 million Chep pallets in use in the U.S., and most carry loads for four or five trips each year, says Brindley. Damaged Chep pallets are repaired and repainted, then returned to a Chep distribution center for reuse. The third-party management system leaves fewer for traditional pallet recyclers to resell, but likely is increasing overall pallet recycling. It also raises an issue of pallet ownership, which traditionally has been the right - and often, the headache - of the person who received the last delivery.

Another source of competition is the plastic pallet, which has taken a small bite of the market. Its continued growth may be limited due to a higher production cost, however. "Even though grocery distribution centers have an economic incentive to return Chep's pallets to the company, you still see many blue pallets flowing back to pallet yards," says Brindley. "Plastic pallets can leak through the system just as easily."

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DESCRIPTORS: Pallets; Recycling; Industrywide conditions; Wood
CLASSIFICATION CODES:8630 Lumber & wood products industries ; 9190
United States ;
CODEN: BCYCDK
GEOGRAPHIC NAMES: United States; US
SPECIAL FEATURES: Photograph
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09/982,991 Examiner: Jim McClellan Art Unit 3627 PK5-7X07 305-0212

File	Number	Title	Date
350	014280933	Recyclable container management system e.g. for beer bottles	9/1/00
13	1181240	Are Reusable Containers Worth the Cost	6/1/00
484	04787942	Recycling continues ascent in pallet business	

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bits corresponding admonition to manufacturer and seller

vely

Assignee: NGK INSULATORS LTD (NIGA); ASAHI TEC KK (ASAI); MEIKO

KK (MEIK-N)

or: AGEKURA I; KAWAMURA S; KIMIZUKA O; URAI S

of Countries: 003 Number of Patents: 003

Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
2002128234	A	20020509	JP 2000325534	A	20001025	200251 B
20020069141	A1	20020606	US 2001982991	A	20011022	200260
US 1363905	A	20020814	CN 2001137149	A	20011024	200280

Priority Applications (No Type Date): JP 2000325534 A 20001025

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002128234	A		7	B65G-001/137	
US 20020069141	A1			G06F-017/60	
CN 1363905	A			G06F-017/60	

Physical distribution management system for *inventory* control, calculates product insufficiency and *returnable* *package* insufficiency and transmits corresponding admonition to manufacturer and seller respectively

Abstract (Basic):

... By calculating for insufficiency of product *inventory* and *returnable* *package* and transmitting corresponding admonition to manufacturer and seller respectively, the *inventory* control of the *returnable* *package* and the product is performed effectively...

36/3,K/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014280933 **Image available**

WPI Acc No: 2002-101634/200214

XRPX Acc No: N02-075437

Recyclable container management system e.g. for beer barrels, collects product ID, receiving date and delivery date information of each container from bar-code readers, and manages collected information

Patent Assignee: NIPPON STEEL CORP (YAWA); SAPPORO BREWERIES LTD (SAPB)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001341814	A	20011211	JP 2000169204	A	20000606	200214 B

Priority Applications (No Type Date): JP 2000169204 A 20000606

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001341814	A		12	B65G-001/137	

Abstract (Basic):

... Since information about product ID, receiving date and delivery date of containers are collected, *inventory* control information is exactly obtained and *recyclable* *container* information is efficiently collected and managed...

36/3,K/11 (Item 11 from file: 347)

DIALOG(R)File 347:JAPIO

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07573819 **Image available**

DRUM MANAGEMENT SYSTEM AND DRUM LEASE SYSTEM